# *Appendix 3-B*

# *DEVELOPING AN EFFECTIVE LOCAL STORMWATER MANAGEMENT PROGRAM*

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## 3.B.0 INTRODUCTION

To effectively deal with the problems of urban stormwater runoff and meet the regulatory requirements addressed in Chapter 2, Virginia communities need to adopt a comprehensive approach to stormwater management that ties together stormwater quantity control with water quality protection, protection of stream channels and riparian corridors, floodplain management, and the use of stormwater facilities for multiple purposes.

Given this broad charge, the development of a local stormwater management program often involves a *rethinking* about stormwater by local communities. Those responsible for stormwater management can no longer limit their mission to drainage and flood control. Instead, local government agencies need to broaden their mission to encompass these broader goals.

Urban stormwater runoff needs to be viewed as a valuable water resource that can and should be managed within the context of the locality and watershed as a whole. Furthermore, as all of the actions within a watershed ultimately impact Virginia's downstream waters, a holistic approach to stormwater management must be developed.

Local governments have a large responsibility for stormwater management in Virginia, since it is at the local level where land use, development and infrastructure decisions are typically made. The overall purposes of a local stormwater management program are to:

- Minimize the adverse impacts of stormwater runoff on the locality and individual properties;
- Meet the state and federal regulatory requirements for stormwater runoff quantity and quality management; and
- Ensure that the locality's priorities, needs and desires are taken into account in meeting stormwater management goals.

In addition, an effective local stormwater management program requires an institutional structure that includes the following:

- Adequate legal authority
- Performance standards for development
- Design guidance and assistance
- Program funding and staffing
- Commitment to enforcement
- Public education and citizen involvement
- Accountability

This chapter provides guidance regarding what is necessary for a locality to become authorized as a qualifying local stormwater management program, or Virginia Stormwater Management Program (VSMP) Authority, and the key components that need to be addressed by a VSMP. The components include but are not limited to administrative requirements, plan review, issuance of coverage under the VSMP general permit for discharges of stormwater from construction activities, inspection, enforcement, stormwater facility maintenance, and reporting.

## 3-B.1 DEVELOPING AN EFFECTIVE LOCAL STORMWATER MANAGEMENT PROGRAM

Developing an efficient and effective local stormwater management program requires planning and forethought regarding a locality's needs and resources. There are four key considerations involved in establishing an effective program:

- Program Goals and Requirements
- Program Components and Priorities
- Organizational Structure and Staffing
- Program Funding

A locality must determine the best approach for implementing and building public support for the program. The goal of this section is to provide an overview of the necessary steps that must be undertaken in putting together an effective local stormwater management program.

### 3-B.1.1 Defining Problems, Program Goals and Requirements

The first step in building an effective and comprehensive local stormwater management program is to evaluate and document the current problems, needs, and regulatory requirements for stormwater management facing the local government. This includes the following:

- Identifying the location and magnitude of existing and/or potential stormwater-related problems, including flooding, property damage, water quality impairment, streambank erosion, and habitat degradation; and
- Determining the state and/or federal regulatory requirements that must be met by the locality.

Documenting stormwater-related problems and legal mandates can help elected officials recognize the need for a local SWM program and establish practical and legal foundations for the program. This step should ideally be performed with a team from several departments to ensure inter-agency coordination. The public should be involved through the use of a stakeholder or citizens' advisory group.

All stormwater program goals should be based on problems that are clearly recognized as being important by the general public and that can be addressed by the basic powers and responsibilities of the local government. A consensus-building approach, with citizen input, can be used to develop general program goals. These goals often reflect the following general responsibilities:

- Protect life and health
- Minimize property damage
- Ensure a functional drainage system
- Protect water quality
- Protect drinking water supplies
- Guide development
- Protect floodplain functions
- Encourage economic development
- Protect and enhance the environment
- Improve quality of life

In addition, a local government may have a number of local priorities, such as protecting fisheries and wetlands, which may become additional goals for the local stormwater management program to address.

Objectives are then formed for each key program functional area (see **Table 3.2** below), keeping the basic goals in mind. For example, a goal might be to protect streams so they maintain any beneficial uses established by the state or the locality. Objectives might include floodplain acquisition, establishing riparian buffer requirements, implementing a monitoring program, or establishing a greenway master plan. Written policies, ordinances, etc. then grow out of these objectives.

### 3-B.1.2 Determining Program Components and Priorities

Once stormwater needs and requirements have been identified, and goals and objectives developed, a locality can begin to formulate the activities that need to be undertaken. It is best to do this in two steps:

1. Develop overall stormwater program priorities in each of the key functional areas; then

2. Translate these priorities into actual program components with an organizational chart and implementation schedule.

Questions to ask include the following:

1. What should the major stormwater program priorities be in the next 3-5 years?
   - Priorities are developed to address program requirements and goals/objectives.
   - A special effort is made to identify specific opportunities to move in a more proactive direction rather than simply being reactive (e.g., taking ownership and focusing on broader local stormwater issues, and not just doing the minimum necessary to comply with the state requirement to adopt a program).
   - Efforts are made at anticipating future concerns not currently identified and planned.

2. How should these program priorities be translated into specific program changes or new program activities in terms of resources, manpower, and policy?
   - Specific program elements and/or changes are proposed.
   - A 3-5 year cost-of-service estimate is made to assess the ability of the local government to accomplish the program priorities under the program.
   - The needs of each program priority are also defined in terms of policy changes and tools required to implement the policy.

The various elements and activities that will be included in a local stormwater management program will vary depending on the needs, priorities and resources of the locality in question. **Section 3.1** above and **Table 3.2** below outline program elements that should be considered in a comprehensive program.

### 3-B.1.3 Organizing Program Structure and Staffing

The next step is to evaluate the current stormwater management activities within the locality and determine how the planned program will be handled organizationally. This includes assessing current local programs and activities that may be applicable to the stormwater management program and determining which governmental department or agency will be assigned to a program element or task. The functions that need to be addressed for a stormwater management program can be divided into the following areas:

- General Administration
- Financial Management
- Stormwater Planning and Engineering
- Capital Improvements
- Operations and Maintenance
- Regulation and Enforcement

**Table 3-B.1** below can be used as an initial tool to help identify the operational or program functions needed. This table has divided a generic stormwater management program into the six major functional areas reflecting the elements that may be included in the local stormwater management program and that require financial and other resources. This chart can be used both as a starting point in locality's assessment of its stormwater program, and as a tool to seek ways to improve the program and allocation of resources and staff.

Traditionally stormwater has been the concern of drainage engineers. However, comprehensive stormwater management is a multi-disciplinary undertaking that also requires the expertise of urban planners, development specialists, transportation planners and engineers, civil engineers, landscape architects, environmental scientists, code inspectors, and many others. As such, stormwater responsibilities are often dispersed among several departments and/or organizations. These departments often work independently, and sometimes at cross purposes.

Some of the local government departments or agencies that may need to be part of the development and/or implementation of the stormwater management program and related policies include the following:

- Planning and Community Development
- Engineering
- Public Works
- Transportation/Streets
- Building/Code Enforcement
- Parks and Recreation
- Facilities and Fleet Management
- Water and Sewer Utilities
- Sanitation
- Police/Fire
- Legal
- Finance and Accounting

***Table 3-B.1. Stormwater Management Functional Areas and Typical Program Components***

| Functional Area | Typical Program Components |
|---|---|
| Administration | General Administration<br>Program Planning and Development<br>Personnel<br>Intra-Local Coordination<br>Public Awareness and Involvement<br>State and Federal Regulation Compliance |
| Billing and Finance | Financial Management and Budgeting<br>Capital Outlay<br>Customer Service<br>Billing Operations (if there is a Stormwater Utility) |
| Stormwater Planning and Engineering | Stormwater and Watershed Master Planning<br>Development Requirements<br>Design Criteria and Standards (local Guidance Manual or by reference)<br>Development Plan Review and Approval<br>Field Data Collection<br>Stormwater Modeling<br>Design, Field and Operations Engineering<br>Hazard Mitigation<br>Retrofitting Program<br>Zoning Support<br>Multi-Objective Planning Support<br>GIS and Database Management |
| Capital Improvements | Construction<br>Land Acquisition<br>Easements and Rights-of-Way<br>Structural Control Retrofits<br>Infrastructure Repair/Replacement Planning and Execution |
| Operations and Maintenance | General Routine and Remedial Maintenance<br>Emergency Response Maintenance<br>Street Maintenance Program<br>Spill Response and Cleanup<br>Infrastructure Management<br>Public Assistance |
| Regulation and Enforcement | Code Development and Enforcement<br>General Permit Administration<br>Drainage System Inspection<br>Drainage System Regulation<br>Development Site Inspections<br>Stormwater Monitoring Program<br>Specialized Inspection Programs<br>Zoning and Land Use Regulation<br>Flood Insurance Program<br>Floodplain Management<br>Erosion and Sediment Control Program<br>Illicit Connection and Illegal Dumping Program |

Source: ARC (2001)

**Table 3-B.2** shows an example of several stormwater program elements and the departments or agencies and staff members that might be responsible.

***Table 3-B.2. Example of Stormwater Program and Potentially Responsible Departments and Staff***

| Program Element | Potential Department/Staff Responsible |
|---|---|
| Review of Stormwater Management Plans | Development Department (engineers, planners)<br>Engineering Department (engineers, technicians) |
| Stormwater Quality Monitoring | Water & Sewer Department (engineers, technicians, lab analysts)<br>Health Department (scientists, lab analysts) |
| Site Inspections | Development Department (inspectors, planners)<br>Engineering Department (inspectors, engineers)<br>Building Department (inspectors, engineers)<br>Transportation Department (engineers, maintenance personnel) |
| Maintenance of Structural Controls | Public Works Department (maintenance personnel)<br>Transportation Department (engineers, maintenance personnel) |

Source: ARC (2001)

A locality's options for organizing a stormwater management program typically falls into one of three basic configurations:

- Organization within Another Department. This is a very common organizational structure for a local government. Typically, stormwater activities would be organized under an already existing agency or department, such as a public works, engineering, transportation, or utilities department that has traditionally handled drainage issues.
- Stand-Alone Organization. Some local governments have established a fully functioning stormwater management department or agency that operates independently from other departments. Funding may come from an independent source, such as a stormwater utility. These types of organizations typically have more latitude to issue revenue bonds and respond directly to stormwater-related issues.
- Array or Multi-Matrix Organization. Sometimes no formal stormwater entity exists within a local government. Instead, stormwater responsibilities are shared internally among several department or agencies. This type of organization is typical of smaller cities and counties. Some communities may also choose to hire outside contractors (e.g., the nearby Soil and Water Conservation District, Planning District Commission, or private consultant) to perform some services such as stormwater planning, plan review, engineering design or maintenance activities. These types of programs are typically funded by general revenues or impact/permit fees, and they demand careful coordination to assure effective operation..

Whether a new stormwater management department is created or existing departments handle this program, a variety of staff expertise and inter-departmental coordination will be required. It is important to develop a consensus among the various departments that provide stormwater management services in a locality regarding program goals and priorities and operational responsibilities. Any process that shifts staff, budget and responsibilities (and perhaps prestige) between managers and departments – especially those that require reorganization – require

careful attention. This may involve educating all levels of staff; directing and coaching managers who are increasing their department's size, budget and responsibilities; and reprogramming and refocusing managers who are losing staff and resources.

Since the need to organize stormwater programs rarely brings about a total governmental reorganization, communities can remedy the situation of an ineffective stormwater organization by the following methods:

- Forming an ad hoc staff committee to seek ways to work jointly and in coordination for all the various aspects and functions of the stormwater program;
- Reorganizing to the extent necessary to align programs that have primary stormwater duties;
- Assigning overall stormwater coordination duties at a level at which all authority comes together, often in the form of a stormwater manager; and
- Developing a stormwater policy and procedures document in which all significant stormwater duties and actions are outlined (often with flow charts) with defined authority, responsibility and procedures.

### 3-B.1.4 Funding the Program

The best designed stormwater management program will founder without sufficient local support and funding. Funding is required for both the formation and on-going operation of a local stormwater program. In terms of the long-term operation of the program, there are two key funding issues to resolve: (1) how much money is required to fund the program annually; and (2) how to support the program with a consistent and dedicated funding base.

The Center for Watershed Protection has developed a Stormwater Management Program Budgeting Tool that can assist in determining how much money will be needed to adequately fund the local program. The documentation is available online at:

http://www.cwp.org/Resource_Library/Center_Docs/SW/pcguidance/Tool2.pdf **[check link]**

The accompanying MS-Excel spreadsheet tool is available online at:

http://www.cwp.org/Resource_Library/Center_Docs/SW/pcguidance/Tool2programspreadsheet.xls **[check link]**

In Virginia, general revenues from real estate taxes have historically been the main funding source for local stormwater management activities. However, there are a number of alternative funding methods for stormwater management programs:

- Permit and/or plan review fees
- General funds
- Sale of bonds
- Loans from the Virginia Water Utilities Revolving Fund for SWM Facilities
- Establishing a pro rata share funding system
- Establishing stormwater user fee systems (known as stormwater utilities)

- Grants

Each funding approach has its own advantages and limitations. These methods are discussed below and should be explored and assessed as potential sources of revenue, based on suitability and public acceptance.

#### 3-B.1.4.1 Permit and Plan Review Fees

Part XIII of the Virginia Stormwater Management Regulations (4 VAC 50-60-700 et seq.) establishes a schedule of fees associated with obtaining coverage under the General Permit for Discharges of Stormwater From Construction Activities (permits for stormwater management for land-disturbing activities). This is a new and dedicated source of revenue for local governments to use, as a result of the most recent revisions to the regulations.

The fees are split 72% to the local program and 28% to DEQ. These fees were established at levels that allow a local program to cover stormwater program costs. Likewise, the DEQ portion allows the Department to cover its costs of administering the statewide stormwater management program. Permit fees are established for:

- Construction activity coverage (Individual and General Permit, based on project acreage)
- Construction activity modifications or transfers (Individual and General Permit). This provision is for those permits that require significant additional administrative expenses such as additional plan reviews, etc.
- Construction activity annual permit maintenance fees (Individual and General Permit) This provision is for those projects that have not been completed and terminated within a year.

The amounts of the fees were determined based on surveys of local governments and state regulatory staff, based on the following factors:

- Amount of time and materials needed to accomplish the various elements of a stormwater management program
- The numbers of permits requested annually for different scales of construction and development
- The varying levels of effort involved at each of these scales
- The level of effort involved in DEQ oversight reviews of local programs
- Enforcement activities at both the state and local levels.

No more than 50% of the fees may be due upon application, and the remaining fee is due at issuance of coverage. A locality may establish lower fees for its program if it can demonstrate its ability to fully and successfully implement a qualifying program at a lower rate or from a different funding source. Fees may also be increased with the approval of the Virginia Soil and Water Conservation Board if the locality can show the increase is necessary to properly implement the program.

When establishing the fees, the Department did consider whether or not to add a long-term BMP inspection and maintenance component to the fee regulations. While recognizing the importance

of BMP inspections and maintenance, the Department chose to *not* include this additional cost in calculating the permit fees being paid by the development industry, for two reasons. First, longterm inspection and maintenance, although very important for the continued proper functioning of BMPs, is not directly associated with the construction process for which the permit fees are assessed. Second, other provisions of state law authorize local governments to establish stormwater utility service fees (discussed in **Section 3.2.4.6** below) to address inspection and maintenance of BMPs and other functions involved with the Regulation of stormwater.

Finally it should be noted that, in addition to the VSMP permit fees, the Virginia Erosion and Sediment Control Law and associated regulations authorize localities to establish fees to cover the costs of reviewing and approving plans for preventing erosion and sedimentation, an element of comprehensive stormwater management. Communities can therefore continue to collect these fees in addition to the permit fees described above, in order to ensure sufficient funds to administer their local programs effectively.

### 3-B.1.4.2 General Fund

General appropriations are the traditional way of funding most governmental programs and services. The strongest advantage of general funding is that it represents a relatively stable funding source from local taxes. However, as we have observed during the national economic crisis beginning in 2007, severe economic recessions can result in significant reductions in property values upon which local revenues are based. Recently this has resulted in a reduction in the amount of general funds available for many important programs and services in most Virginia localities. Another disadvantage is that, even when general funds are relatively stable, stormwater activities must compete with other local programs and activities for limited funds. A government which chooses to use its general fund may subject its stormwater operations to budget deliberations each fiscal year, resulting in the program having a fluctuating revenue stream and, by extension, inconsistent program implementation from year to year.

### 3-B.2.4.3 General Obligation Bonds

Debt financing of capital and operation and maintenance (O&M) costs can be accomplished through issuing general obligation bonds, revenue bonds, or a combination of the two. A bond issue requires voter approval on a referendum ballot and is subject to state legislative limits and local administrative policy in the form of debt ceilings. Most stormwater project debt has been financed through issuance of 15-year term bonds. These bonds are repayable from service charge proceeds, general revenues and other sources (e.g., development fees), depending on the type of debt issued.

### 3-B.1.4.4 Use of the Virginia Water Facilities Revolving Fund for Stormwater Management

Section 62.1-229.4 of the Code of Virginia, adopted by the General Assembly in 2010, adds stormwater management BMPs and facilities to the list of purposes for which the Virginia Water Facilities Revolving Fund may be used, subject to guidelines, terms and conditions developed by

the State Water Control Board and DEQ. However, there are conditions that apply to the granting of loans from the fund for stormwater management purposes, as follows:

- Loans for stormwater management BMPs and facilities may be granted only after requests for funding needed for eligible wastewater treatment facilities/upgrades designed to meet state water quality standards have first been satisfied;
- Communities that have adopted local stormwater management pro rata share program (subject to § 15.2-2114) will then have first priority for such loans;
- Projects designed to reduce or prevent pollution in a water body in violation of state water quality standards will have second priority;
- Local governments subject to a MS4 permit will have third priority;
- Communities that have adopted local stormwater management programs (subject to § 10.1-603.2:2) will have fourth priority; and
- All others will have fifth priority.

### 3-B.1.4.5 Use of the Stormwater Local Assistance Fund

Through the state budget process, the 2013 General Assembly established a new fund, called the Virginia Stormwater Local Assistance Fund, as a source of matching grants to local governments for the planning, design, and implementation of stormwater best management practices that address cost efficiency and commitments related to reducing water quality pollutant loads. Moneys in the Fund must be used to meet:

- Obligations related to the Chesapeake Bay total maximum daily load (TMDL) requirements;
- Requirements for local impaired stream TMDLs;
- Water quality requirements of the Chesapeake Bay Watershed Implementation Plan (WIP); and
- Water quality requirements related to the permitting of small municipal stormwater sewer systems.

The grants must be used solely for capital projects meeting all pre-requirements for implementation, including but not limited to:

- New stormwater best management practices;
- Stormwater best management practice retrofits;
- Stream restoration;
- Low impact development projects;
- Buffer restoration;
- Pond retrofits; and
- Wetlands restoration.

### 3-B.1.4.6 Pro-Rata Share Program

Section 15.2-2243 of the Code of Virginia provides that if a locality has established a general improvement program for an area having related and common sewer, water and drainage conditions, the locality may provide in its subdivision ordinance for payment by a developer of land within the designated area of the pro rata share of the cost of providing the necessary

facilities. The local ordinance or regulations governing the pro rata share program must establish reasonable standards for determining each developer's proportionate share of the total estimated cost of the ultimate sewer, water and drainage facilities needed to serve the designated area, which must be developed in accordance with the local comprehensive plan. The proportionate share is limited to:

- The amount necessary to protect water quality based on the pollutant loading caused by the subdivision or development; and
- The proportion of the total estimated cost which the increased sewage flow, water flow, and/or increased volume and velocity of storm water runoff caused by the new subdivision or development bears to the total estimated volume and velocity of such sewage, water, and/or runoff from the *entire* area in its fully developed state.

In calculating the pollutant loading caused by the subdivision or development, or the volume and velocity of storm water runoff, the governing body must take into account the effect of all on-site stormwater management facilities or BMPs constructed or required to be constructed by the developer and must give appropriate credit for them.

Pro rata share payments received by the locality may be expended only for (1) necessary engineering and related studies and (2) the construction of those facilities identified in the established sewer, water, and drainage program. The payments may not be used for maintenance of stormwater facilities. The payments received must be kept in a separate interest-bearing account for each of the individual improvement programs until they are actually spent for the improvement program. The law provides for circumstances under which the interest would revert to the benefit of the property owner.

Pro rata share programs are often adopted by communities to support watershed-scale comprehensive stormwater management plans, where the funds collected are used to design and build regional-scale BMPs at designated sites in lieu of having the developers build BMPs on individual development sites within the watershed or planning area. Nevertheless, within the constraints of its authorizing language, a pro rata share program can provide a portion of the funds a locality needs to pay for its stormwater management program.

#### 3-B.1.4.7 User Fees / Stormwater Utilities

A stormwater user fee system is a financing option that provides a stable and dedicated revenue source for stormwater management. As authorized by § 15.2-2114 of the Code of Virginia, user fees for stormwater management present an alternative to increased taxes or impact fees for the support of local program operations and maintenance, as well as the funding of other stormwater program activities. In a stormwater user fee system, stormwater infrastructure and programs are considered a public service or utility similar to wastewater and water programs that are funded on a similar basis.

The Code of Virginia allows income derived from these charges to be dedicated as special revenue and may be used only to pay or recover costs for the following:

- The acquisition of real and personal property, and interest therein, necessary to construct, operate and maintain stormwater control facilities;
- The cost of administration of such programs;
- Engineering and design, debt retirement, construction and maintenance costs for new facilities and enlargement or improvement of existing facilities, including the enlargement, improvement or maintenance of dams, whether publicly or privately owned (subject to additional provisions of law);
- Monitoring of stormwater control devices;
- Pollution control and abatement, consistent with state and federal regulations; and
- Planning and operation

Similar to water and wastewater rates, stormwater fees are assessed on users of the system based on average conditions for groups of customers with similar service requirements. Typically, fees are based on some measure of a property's impervious area (which adds to the amount of stormwater runoff that must be treated or otherwise managed). Rates may be assessed in charges per either equivalent dwelling unit (e.g., "x" dollars per EDU per month) or unit area (e.g., "x" dollars per 100 square feet of impervious area per month). Alternative methodologies include the use of a runoff factor or coefficient based on the type or category of land use, a flat fee per customer, or a combination of any of these methods. There should be a clear nexus between the amount of the fee and the problem creating the need for funding.

A stormwater utility operates similarly to water, sewer, or fire districts, which are funded through service fees and administered separately from the general tax fund, ensuring stable and adequate funding for these public services. Stormwater utilities have existed for a number of years in several states, including Virginia. Prince William County, the City of Richmond, and numerous Hampton Roads localities, among others, have established stormwater utilities.

Generally a locality enacts two ordinances to create a stormwater utility, one to establish the various components of the utility and the other to determine the rate structure. Forming the utility through two separate ordinances allows the flexibility to alter the rate structure without having to revise the ordinance governing the basic structure of the utility. The first ordinance may also include a statement of the goals of the utility. The second ordinance structures the service charges to create a logical and equitable relationship between the quantity of stormwater leaving a property, the benefits received from the stormwater system, and the amount assessed.

The stormwater utility rate should be designed to defray the costs of the service provided by the municipality. It is important that there is an equitable relationship between the amount of stormwater generated by a given property, the benefit received by the rate payer, and the corresponding fee assessed. Generally, case law suggests that a rate will be deemed valid where (1) the revenue generated benefits for the payers primarily, even if not exclusively; (2) the revenue is only used for the projects for which it was generated; (3) the revenue generated does not exceed the costs of the projects (i.e., utilities are not supposed to be profit centers); and (4) the rate is uniformly applied among similarly situated properties.

The following are features of a utility which should enhance its chances of surviving any legal challenge:

- Operation as a separate public utility (similar to a water, wastewater, or power utility);
- Detailed findings explaining why the project is needed to protect the public health, safety and welfare;
- Revenues from fees are segregated and managed as a separate fund;
- Fees are proportionate to the burden placed on the system by each class of property;
- Credits can be implemented;
- Findings and resultant fees are based upon a professional analysis; and
- An appeal process is provided.
- In Virginia, authority is included to issue general obligation bonds or revenue bonds in order to finance the cost of infrastructure and equipment for a stormwater control program.

Though they are not without significant administrative, political and potential legal hurdles, stormwater utilities are worth considering as a potential funding source for local stormwater management activities. There are numerous models in practice, and some now have decades of experience and success. **Appendix 3-E** of this chapter provides a case study regarding establishment of a Stormwater Utility in the city of Staunton, Virginia.

#### 3-B.1.4.8 Grants

There are governmental and private sources of grant funding for which stormwater management efforts may be eligible. The upside of grant funding is that it is essentially *free* money. That is, it is someone else's money that can be used to fund your project or program, at least for a short period of time. The downside of grant funding is that it is typically a very competitive process, and a fair amount of effort is involved in identifying applicable grants and crafting proposals that are strong enough to out-compete other applicants. There is also time involved in managing the grant during its execution and providing required reports and accounting to the funding source.

Grant funding may be most appropriately used in a local SWM program to fund one-time, short-term projects, such as a base-line water quality monitoring project or establishment of a GIS network of the stormwater management infrastructure in the locality. Routine operational budgets are often not equipped to fund these kinds of projects, unless the budget has a set-aside component for the random (or long-term scheduled) project, similar to corporate research and development funds. **Table 3-B.3** provides a summary of the advantages and disadvantages of the various stormwater program funding approaches.

### 3-B.1.5 Implementing the Program

Once the framework for the local stormwater management program has been established, it is important to develop a plan and schedule for implementing the program. A concerted effort should be made to inform the public of the locality's stormwater management needs, of the fact that a plan of action for local stormwater management has been developed, and that all parties must share responsibility for solving the problems.

***Table 3-B.3. Advantages and Disadvantages of Various SWM Program Funding Approaches***

| Funding Approach | Advantages | Disadvantages |
|---|---|---|
| **Permit and Plan Review Fees** | Dedicated fees that function as the core funding for local stormwater management programs.<br><br>A new and substantial stream of revenue for local governments that is not dependent upon their own taxing authorities. | State sets the fee schedule in regulation and can adjust it annually based on the CPI-U, but localities have no direct control over setting the amount of the fees.<br><br>The basis for these fees does not account for long-term BMP inspection/maintenance. |
| **General Fund** | Short lead time; ease of implementation.<br><br>Capitalizes on existing resources; may be attached to public works, planning, or another appropriate department; existing funding base is known.<br><br>If locality-wide benefits are realized, is a very equitable approach.<br><br>May have more options available for funding capital projects; therefore, the cost of capital may be lower. | Initial capital outlays likely to require significant general fund withdrawal or tax increase.<br><br>If funding levels increase through contributions from other programs or departments, subject to budget deliberations each year; this may impede research and maintenance activities.<br><br>If funding levels increase through taxes, subject to political sensitivity of raising taxes of those who may not benefit from improvements. Success dependent on general financial health of local government.<br><br>Inflexible structure for setting funding priorities – funding may not be consistent with actual program needs. |
| **General Obligation Bonds** | Covers funding needs for significant time period.<br><br>Results in dedicated, known source of funds that may include funding for operating requirements.<br><br>May be linked to other projects (e.g., road improvements) to improve acceptability. | Likely to require tax increase on all constituents, some of whom may not benefit from improvements.<br><br>Interest, dividend and issuance costs added to total costs for the life of the payoff.<br><br>Not stable enough to support all O&M indefinitely; unlikely to attract investors if not supplemented with other funding sources. |
| **Use of the Virginia Water Facilities Revolving Fund for SWM Facilities** | This provides still another new source of funding for local stormwater management BMPs and facilities. | There are significant constraints and priorities that may limit the extent to which funds are actually available for this purpose. |
| **Use of the Stormwater Local Assistance Fund** | This provides still another new and significant source of funding for local stormwater management BMPs and facilities. | There are conditions that apply to the use of competitive grants from this funding source. |
| **Pro-Rata Share Program** | In the context of a watershed management plan, a means to generate funding to support the design and construction of regional-scale stormwater control measures. | There are constraints applicable to the use of the funds collected, as well as to use of at least some of the interest generated from investing the funds prior to actual construction of planned facilities. |

| Funding Approach | Advantages | Disadvantages |
|---|---|---|
| **Stormwater Utility** | Stable funding source allows accurate forecasting of revenues.<br><br>Link costs to damages avoided.<br><br>Fees likely to be relatively low.<br><br>Dedicated funding source allows flexibility in setting funding priorities, long-term strategies.<br><br>Allows utility to differentiate rates based on varying levels of service, drainage basin, other specific features.<br><br>Rates create incentive to protect resource.<br><br>Dedicated funding source enhances ability to secure grant, bond monies for projects. | Ease of implementation and administration highly dependent on establishing equitable, cost-based user fees.<br><br>Implementation, start-up time may be significant, depending on structure of public works or other existing department from which fees are administered.<br><br>Proven "track record" required to issue revenue bonds; may have to rely on other sources, or "pay-as-you-go" strategy, for several years.<br><br>Will require significant public education/ support building efforts to gain acceptance for level of fees to cover requirements.<br><br>Administrative costs may be significant, depending on existing administrative resources. |
| **Grants** | Winning grant funds is essentially providing free money to help fund local stormwater program activities. Some grants can be sizeable and can apply over several years. Therefore, they may be appropriate for significant expenditures for one-time events, such as a monitoring project, establishment of a GIS system, or a retrofit or demonstration project. | Grant funds only become available if the locality makes the cut in the competition for the funds, so such funding is by no means assured and is typically periodic at best. Also, the criteria for specific grants may be too limiting to apply to the real needs of the local program. |

Source: Adapted from ARC (2001)

In developing stormwater policy tools and procedures, a local government should make sure that any policy under consideration meets the following criteria:

- Have sufficient legal authority;
- Be consistent with other guidance;
- Be short, clear and to the point;
- Have a sound technical basis;
- Be properly staffed and supported with adequate financial resources;
- Be backed by appropriate administrative procedures and technical support;
- Be integrated into the community with appropriate training and indoctrination; and
- Be strongly enforced.

Implementation of a comprehensive stormwater management program is not a quick or painless process. It requires the commitment of the locality, trained individuals, and effective leadership to ensure that the program meets its long-term goals and objectives. Some of the elements of a "successful" stormwater management program include the following:

- Strong institutional motivation to act on the problem;
- Political and/or grassroots support for the action;
- Skilled personnel;
- A dedicated funding source;
- An environment of institutional cooperation and a long-term commitment to work together; and

- A targeting strategy or process to maximize the use of limited resources.

Effective local stormwater management programs are built upon numerous institutional, economic and technical factors. Setting up a functional program requires outlining problems and goals, determining the required program components and priorities, identifying and obtaining stable funding, and implementing the program. Finally, it should be remembered that stormwater management solutions and programs must be tailored to each locality's particular circumstances and needs.

## 3-B.2 REFERENCES

Atlanta Regional Commission (ARC). 2001. *Georgia Stormwater Management Manual*. Prepared by AMEC, the Center for Watershed Protection, Debo and Associates, Jordan Jones and Goulding, and the Atlanta Regional Commission. Atlanta, Georgia.

Center for Watershed Protection (CWP). July 2008. *Managing Stormwater in Your Community: A Guide for Building an Effective Post-Construction Program*. Ellicott City, MD. available at: http://www.cwp.org/Resource_Library/Center_Docs/SW/pcguidance/Manual/PostConstructionManual.pdf